# Phenology Monitoring at Spalding

## *Importance:*

The National Phenology Network (http://www.usanpn.org/) is designed to monitor the influence climate change has on the phenology of plants, animals and landscapes. Phenology refers to recurring plant and animal life cycle stages such as leafing, flowering, and migration of birds. It also refers to the study of these cycles and their timing/relationship with weather and climate change. At Nez Perce National Historical Park's (NEPE) Spalding site, the staff has adopted this national monitoring protocol. Gathering phenological data is very important because it affects almost all aspects of our environment including:

- the abundance and diversity of organisms
- species interactions
- functions in food webs
- seasonal behaviors
- global-scale cycles of water, carbon, and other chemical elements.

## *Objectives*

Determine the status and trend of 13 native and non-native species of plants and birds at NEPE's Spalding site through phenological observations.

Japanese knotweed (a state-listed noxious weed) is found in riparian areas and is being monitored at the park so that staff can better understand its life history.

## *2011 Status*

Since May, park staff have been collecting phenological data on a weekly basis for 8 plants species including: black locust *(Robinia pseudoacacia*), common yarrow (*Achillea millefolium*), yellow starthistle (*Centaurea solstitialis*), Japanese knotweed (*Polygonum cuspidatum),* ponderosa pine (*Pinus ponderosa*), spotted knapweed (*Centaurea stoebe*), woods' rose (*Rosa woodsii*), and common lilac (*Syringa vulgaris*). These species were observed for their leafing out, flowering, fruiting and dropping of fruits. Staff also observed 5 bird species including: the American robin (*Turdus migratorius*), American goldfinch (*Carduelis tristis*), red-winged blackbird (*Agelaius phoeniceus*), killdeer (*Charadrius vociferus*), and great blue heron (*Ardea herodias*). These species were observed for their feeding habits, calling, singing, mating, and nest building.

Red-winged blackbirds like this female have been observed and recorded in the National Phenology Network's online database.

## *Management Applications*

- Provide small scale data for large scale trends in plant/animal phenology
- Use phenology of invasive weeds to better understand when treatment is necessary (based on life cycle changes observed)
- Inform integrated assessments of climate change impacts on park resources
- Understand changes in the local environment

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